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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,096	08/28/2001	Nabil A. Abu El Ata	3023.1002-001	6177
21005	7590	07/27/2005	EXAMINER	
HAMILTON, BROOK, SMITH & REYNOLDS, P.C. 530 VIRGINIA ROAD P.O. BOX 9133 CONCORD, MA 01742-9133			SAXENA, AKASH	
			ART UNIT	PAPER NUMBER
			2128	

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/942,096

Applicant(s)

EL ATA, NABIL A. ABU

Examiner

Akash Saxena

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11th May 2005
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/6/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-23 have been presented for examination based on amendment filed on 11th May 2005 for the application filed on August 28, 2001. The applicant has canceled claim 24. Claims 1-23 remain rejected by the examiner.

Information Disclosure Statement

2. Examiner acknowledges receipt of IDS submitted on 6th June 2005.

Response to Arguments

Priority

3. Effective priority for the instant application is acknowledged based on claims the benefit of U.S. Provisional Application No. 60/085,350, filed on May 13, 1998.

Claim Objections

4. Examiner withdraws objection to claim 22 (under 37 CFR 1.75) in view of applicant's amendment to write claim 22 in an independent form.

Claim Rejections - 35 USC § 101

5. Examiner withdraws 35 USC § 101 rejections for claims 1-23 in view of applicant's amendment to claims 1, 11, & 21-23.

Double Patenting

6. The terminal disclaimer filed on 11th May 2005 disclaiming the terminal portion of any patent granted on this application, which would extend beyond the expiration date of U.S. Patent No. 6,560,569 & Patent No. 6,311,144 has been reviewed and is accepted. The terminal disclaimer has been recorded. Examiner withdraws *Double Patenting* rejection.

Response to Claim Rejections - 35 USC § 103

Applicant's arguments filed 11th May 2005 have been fully considered.

7. Applicant states:

The EUROEXPERT cited reference is directed to analyzing and upgrading an existing system in contrast to the designing of a proposed system architecture in the present invention. That is, EUROEXPERT analyzes measured performance of an existing system. This is quite different than predicting or projecting performance of a proposed (not in existence) system as in the present invention.

In response to applicant's argument that the intended use of the current application is to design proposed system architecture, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963).

In this case, the EUROEXPERT prior art details all the elements of the claims (1-23). It is thus capable of performing the design of the proposed system (not in existence) architecture in the present invention. Further, The EUROEXPERT prior art teaches the intended use of "designing the proposed system architecture" (EUROEXPERT: "Phase 2 –Implementing the Solution – 1st & 3rd bullets; Pg.1 Col.2 – bullet 5 from top) as amended in by the applicant in independent claims.

8. Further, Applicant states:

The cited IEEE article by Robert White is directed to industrial design for electronic circuits in the manufacturing of circuit boards. This industrial design for electronics is in contrast to the system architecture designing of the present invention. Further White is directed to a discrete event approach whereas the present invention considers the continuous service of the proposed system architecture and predicts performance thereof.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., continuous service of proposed system) are not recited in the rejected claim(s).

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Further, the IEEE article by Robert White teaches a six-sigma business methodology which is of importance and does not limit application of the methodology to discrete or continuous service systems. The cited design for the electronics exemplifies the principles of the six-sigma business methodology applied to claim rejection.

9. Further, applicant states:

At the heart of heart of White is a reliability objective where the number of defects is targeted to be less than six out of one million opportunities. In contrast, the present invention is not directed toward reliability but rather prediction of performance of a proposed system architecture.

Applicant's argument that the White's article is concerned with the reliability not the prediction of performance of proposed system architecture as claimed is considered, but is found non-persuasive. White is clearly concerned with the performance by eliminating the wastage to improve performance of the business process – be it assembly line or sales quotes (White: Pg.28, Col.1 – Last paragraph, Col.2, ¶ 1st; Pg.30 "Measure of process capacity").

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10. Further, applicant states:

The foregoing patentable distinctions of the present invention over the cited references are found in base Claims 1, 11 and 21-23 with the language, or similar language, of "A computer implemented process for designing a computer model based system architecture, comprising...a multi-layer mathematical model of a proposed system architecture...the multi-layer mathematical model being implemented on a computer and the layers of the multi-layer model comprising a business layer, an application layer and a technology layer; ... modeling performance metrics for each layer of the multi-layer model of the proposed system architecture..."

Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections. Applicant is merely restating the claim as basis for arguments for independent claims 1, 11 and 21-23.

11. Further, applicant states:

Neither EUROEXPERT nor White individually or in any combination imply, suggest or make obvious the claimed process or system for designing a system architecture using a multi-layer mathematical model of the proposed system architecture and modeling performance metrics for each layer of the multi-layer model of the proposed system architecture as now claimed in each of the base Claims 1, 11, 21, 22 and 23. Claims 2-5 are dependent on Claim 1 and thus inherit this claim language and Claim 24 is now cancelled. Thus, the j 103 rejection of Claims 1-5 and 1-24 in view of EUROEXPERT and White is believed to be overcome. Acceptance is respectfully requested.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this

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case, EUROEXPERT teaches 3-tiered system architecture comprising of a business model layer. White teaches that six-sigma is a methodology, a philosophy, an exercise in statistics, away of doing business and a tool for improving quality, all of which are applicable at business layer as well as other two layers of the proposed system architecture (White: Pg.28 Col.1 – “What is six sigma?”; Pg.28 Abstract).

Further, both the references are analogous art as both address concerns relating to methods of doing business, as recited in the prior office action and below under 103 rejection. Rejection to claim 1, 11 and 21-23 remain rejected. Further, rejection to claims 2-5 are retained in view of their dependency on claim 1, as well in view of prior art, against which no arguments are presented. Hence rejection for claims 1-5 and 21-24 is retained.

12. Further, applicant states:

Claims 6-10 are dependent on base Claim 1 and Claims 12-20 are dependent on base Claim 11. Thus the foregoing arguments also apply here. Hartley does not add to EUROEXPERT and White the performance prediction of proposed system architecture as in the present invention as now claimed. Further, Hartley does not disclose the use of a multi-layer mathematical model of proposed system architectures in contrast to the present invention as now claimed.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

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In this case, applicant's arguments for claims 1 & 11 are merely restating the claim as basis for arguments and they do not comply with 37 CFR 1.111(c) as previously stated above.

Further, rejection to claims 6-10 are retained in view of their dependency on claim 1, as well in view of prior art, against which no arguments are presented. Likewise, rejection to claims 12-20 are retained in view of their dependency on claim 11, as well in view of prior art, against which no arguments are presented.

Claims 1-23 remain rejected by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 1-5, 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over EUROEXPERT - Best Practices: French Social Security - UNEDIC dated 1992 in view of IEEE article – “An Introduction To Six Sigma With Design Example” by Robert White dated 1992.

Regarding Claim 1

EUROEXPERT Best Practices document discloses

“A process for designing a model based system architecture, comprising: providing a business process design, the business process design describing a plurality of business processes and defining a set of business requirements for each business process; constructing a multi-layer mathematical model of a system architecture supporting the business process design, the layers of the multi-layer model comprising a business layer, an application layer, and a technology layer;”

as a tiered model GATE model identical to claimed model application that collects measurements from 3 domains, namely, business domain/layer, application domain, technology/system/network domain, illustrated by a figure called “Modeling Business Value Chain” (EUROEXPERT Best Practices: Col 2). This model incorporates the business goals and characteristics of the system design. It can be seen from the reference that this model captures the business requirements for business processes as well as delegates them to 3 layers. The public knew about this model in February 1992 (EUROEXPERT Best Practices: Col 2, Lines 16-18).

Although the EUROEXPERT Best Practices article discloses the results of the 3-tiered business model, it does not teach specifically modeling the performance matrix of the for each layer, simulating, comparing them to the requirements, acceptability, proposing & modifying the matrix at appropriate layers.

White's article teaches how six-sigma methodology can be used to perfect any process, system or component. This process has its mathematical roots in statistics. The process itself has six steps, namely, identify the required function, specify performance requirements, determine component variation, characterize performance and revise design to meet six-sigma mathematical requirement, repeat previous steps to get higher quality results (White: Pg 32, Col. 2, Design Example).

White further discloses,

"modeling performance metrics for each layer of the multi-layer model of the system architecture;"

as the components and their variations can be modeled using an electrical circuit example (White: Pg 33, Col. 1, D Step 3, Line 3-8). These components can then be simulated to measure their performance using various mathematical & statistical calculation, White discloses circuit example with Monte Carlo simulation (White: Pg 33, Col 2, 2nd Paragraph).

White further discloses,

"comparing the modeled performance metrics with the set of business requirements for each business process, said comparing producing respective indications of unacceptable performance metrics of one or more business processes that do not satisfy the set of business requirements defined for them based on the produced indications;"

as results of such a simulation are compared against the expected values (White: Pg 34, Col. 1, 1-6 & Figure 4). The figure (White: Figure 4) disclosed shows the unacceptable performance as compared to the expected results.

White further discloses,

"and determining modifications to the system architecture."

as replacing the instant model and taking other models & values for the sub-components to enhance and meet performance (White: Pg 34, Col. 1, F Step 5, Line 1-8 & Table V). Modifications are suggested after the results from these simulations are gathered – i.e., in the circuit example used components of higher tolerances are suggested (White: Pg 34, Col. 1, F Step 5, Line 15-16). The reference teaches narrower versions of broader claims in the application. Here a simple electric circuit example teaches a abstract methodology that can be applied to much bigger multi-tiered system as claimed.

It would have been obvious to one (e.g. a designer) of ordinary skill in the art at the time the invention was made to take White's teaching and apply them to EUROEXPERT - Best Practices GATE model disclosed above. The motivation to do so would be a system than can be simulated with various components to meet the requirements. Six-sigma process is disclosed as a way of doing business (White: Pg 28, Col. 1, A. What is Six Sigma, Line 6-9) to increase quality & competitive pricing (White: Pg 28, Col. 2, B "Why Pursue Six Sigma?" Line 1-6), which are also very good business motivations.

Regarding Claim 2

As disclosed above, White proposes performance matrix modification, update and comparison (White: Pg 34, Col. 1, 1-6 & Figure 4). He discloses the circuit component that gives the best results for the quality/cost level (White: Pg 34, Col. 2, 1-3 & Table V). White further discloses a matrix of components with various tolerances and how they are used to access the performance of the circuit (White:

Pg 33, Figure 3 & Pg 34, Table V & VI). The output of his analysis is selection of the component, which is least expensive and highest quality (White: Pg 34, Col. 2, 1-3).

Regarding Claim 3

As disclosed above, White identifies, evaluates various components required in the circuit (White: Pg 33, Col. 1, Figure 3). Searching the data store for various components is implicit, as he has already identified the all variations with different tolerances (White: Pg 33, Col. 1, Table 2).

Regarding Claim 4

White suggests that replacement of components be done one at a time to accurately calculate improved performance (White: Pg 34, Col. 1, F Step 5, Line 1-8 & Table V).

Regarding Claim 5

EUROEXPERT & White do not teach modifying the business model if the supporting components models in application and technology layers have unacceptable performance metrics. However, It would have been obvious to one (e.g. a designer) of ordinary skill in the art at the time the invention was made to modify the business model when the supporting components models are not able to meet performance as it is well-known in the art that business model need to be changed when the underlying application or technology is unable to support the business goals.

Regarding Claim 21

Claim 21 is rejected for the same reasons as claims 1 & 2.

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Regarding Claim 22

Although none of the teachings show generation of system architecture based on the model disclosed, they disclose some form of the output. Since the modeling technique disclosed by White is used for each layer in the EUROEXPERT reference, it would have been obvious to one (e.g. a designer) of ordinary skill in the art at the time the invention was made to create a composite model of the all layers yielding an output architecture of the model, as it is well-known in the art that all complex systems must have an underlying architecture to be modeled and implemented correctly.

Regarding Claim 23

Claim 23 is rejected for the same reasons as claims 1.

Regarding Claim 24

Claim 24 is rejected for the same reasons as claims 1.

14. Claim(s) 6-20 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over EUROEXPERT - Best Practices: French Social Security - UNEDIC dated 1992 in view of IEEE article – “An Introduction To Six Sigma With Design Example” by Robert White dated 1992, further in view of US Patent 6532465 issued to Hartley.

Regarding Claim 6

Disclosures for EUROEXPERT - Best Practices GATE model and by White are presented above. These references do not teach mapping between the 3 GATE domain layers (Claim 6) and presence of buses in the design (Claim 7 & 8). Also there is no mention of the real-time and batch processing systems (Claim 9).

Hartley discloses that mapping between the different layers can be present attain a business objective (Hartley: Col. 5 Lines 12-32). Hartley exemplifies the mapping between the presentation layer and business later in his Figure 4 (Hartley: Col 10, Lines 50-55, Lines 64-67). But it can be seen in Figure 4 that similar mapping existing between the layers below the business layer going down towards domain (application layer) and database (physical database/technological representation layer) (Hartley: Col. 8 Lines 11-16).

It would have been obvious to one (e.g. a designer) of ordinary skill in the art at the time the invention was made to use the layering approach, communication strategy and real-time/batch processing taught by Hartley and apply them to White/EUROEXPERT references. The motivation would be a design, which is abstract enough than can handle new business requirements without significantly

changing the underlying architecture, and specific enough that the business layer can provide rule based processing by passing in metadata. Hence, the business model would be extremely adaptive to changing business, application & technological requirements.

Regarding Claim 7 & 8

Disclosures for EUROEXPERT - Best Practices GATE model and White do not teach presence of buses in the design.

Hartley disclose message buses (Hartley: Col. 11, Lines 4648, 63-65) as means for interfacing between different layers, in broader terms buses are considered to be data conduits between different layers. Hartley explains that these layers may be located on different machine with object layers providing communication (Hartley: Col 10, Lines 24-31).

Regarding Claim 9

Disclosures for EUROEXPERT - Best Practices GATE model and White do not teach real-time and batch processing systems.

Hartley exemplarily discloses applications design that respond in real time (Hartley: Col. 13, Lines 24-31) and another one, which is, batch process driven. Batch processing example disclosed is collection of customer charges (Hartley: Col. 17 Lines 58-68) & batch report generation (Hartley: Col. 19, Lines 18-23).

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Regarding Claim 10

White discloses taking other models and values for the subcomponents to enhance performance and meet performance (White: Pg 34, Col. 1, F Step 5, Line 1-8 & Table V).

Regarding Claim 11

Claim 11 is rejected for the same reasons as claims 1, 2 & 9 are rejected. Further Hartley discloses a system that includes a rule-based engine (Hartley: Abstract Lines 12-15). The output module is the claim is equivalent to batch output component that is disclosed in Claim 9.

Regarding Claim 12

Claim 12 is rejected for the same reasons as claims 1, 2.

Regarding Claim 13

Claim 13 is rejected for the same reasons as claims 1, 2.

Regarding Claim 14

Claim 14 is rejected for the same reasons as claims 1.

Regarding Claim 15

Claim 15 is rejected for the same reasons as claims 5.

Regarding Claim 16

Claim 16 is rejected for the same reasons as claims 6.

Regarding Claim 17 & 18

Claim 17 & 18 are rejected for the same reasons as claims 7 & 8.

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Regarding Claim 19

Claim 19 is rejected for the same reasons as claims 9.

Regarding Claim 20

Claim 20 is rejected for the same reasons as claims 10.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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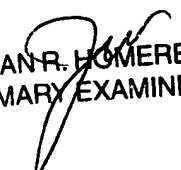
Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Akash Saxena whose telephone number is (571) 272-8351. The examiner can normally be reached on 8:30 - 5:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jean Homere can be reached on (571)272-3780. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Tuesday, July 12, 2005


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